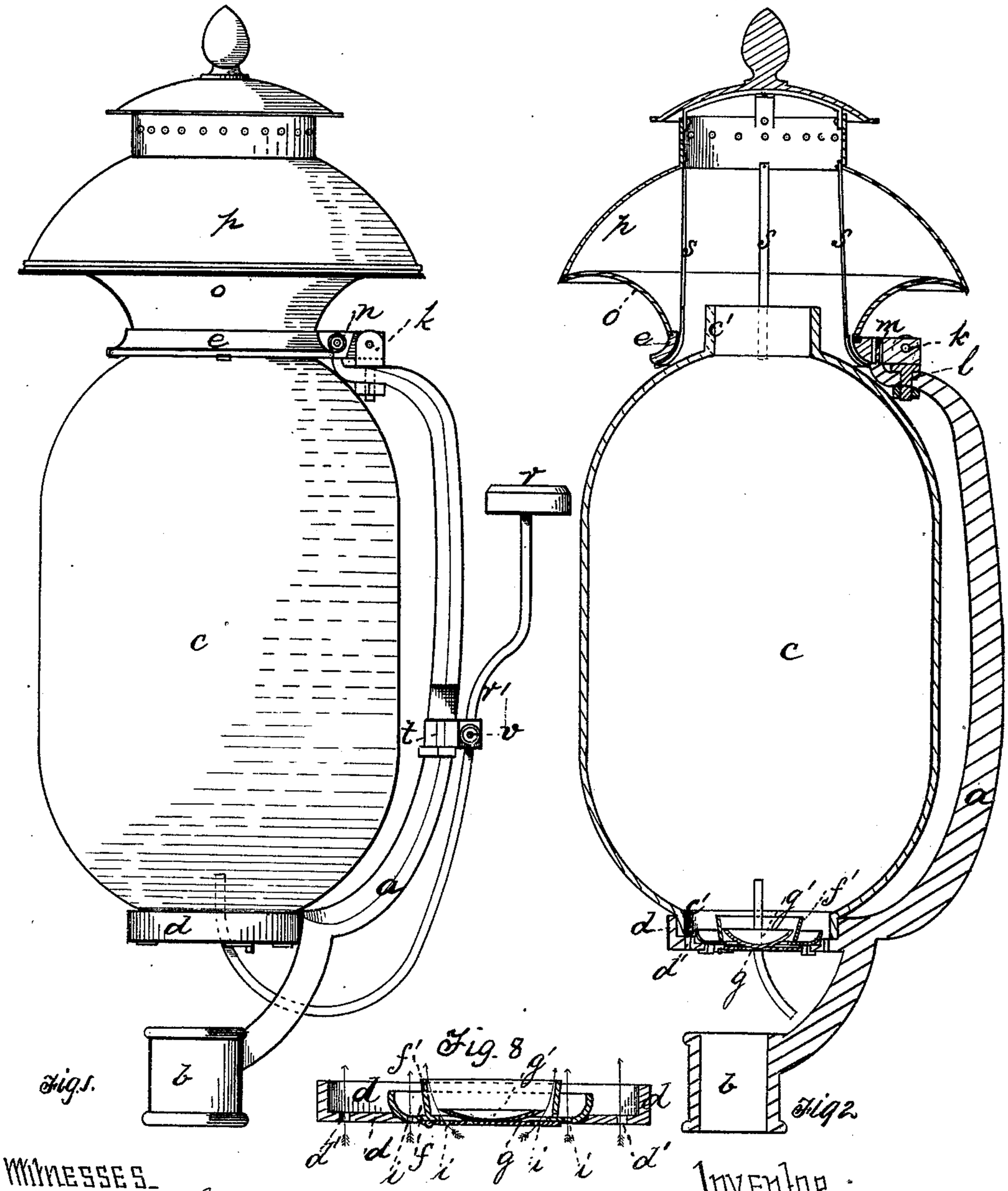
2 Sheets—Sheet 1.

J. IRWIN.

Street-Lamp.

No. 214,394. Patented April 15, 1879.



WITNESSES.
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R. C. Winfield

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2 Sheets—Sheet 2.

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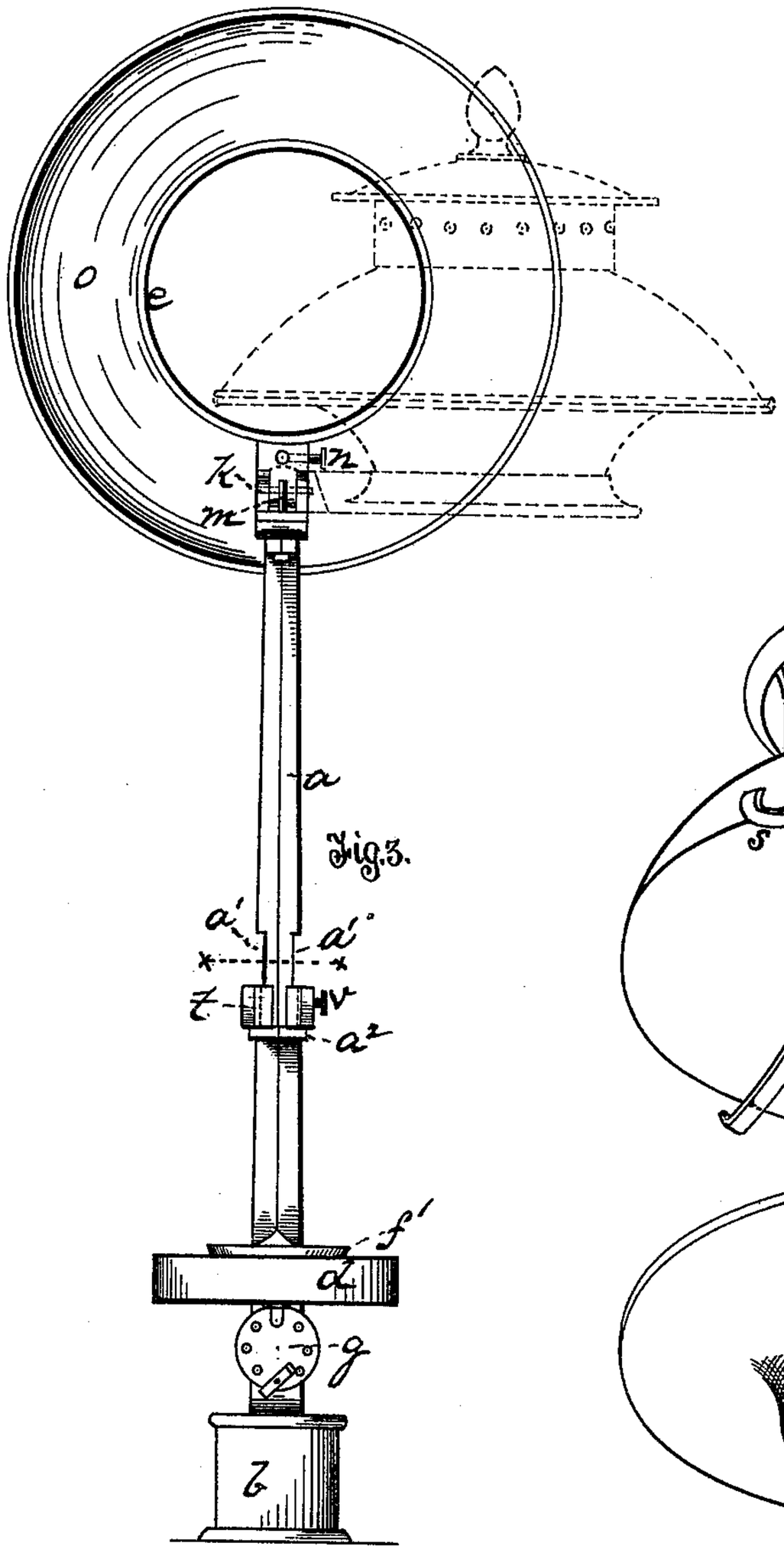

Fig.3.

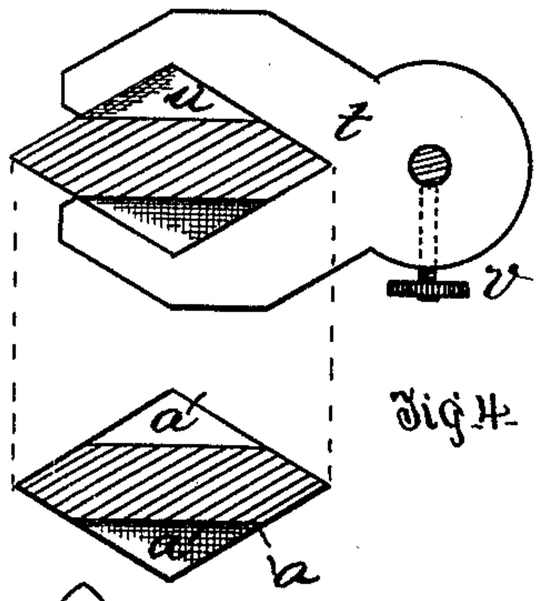

Fig.4.

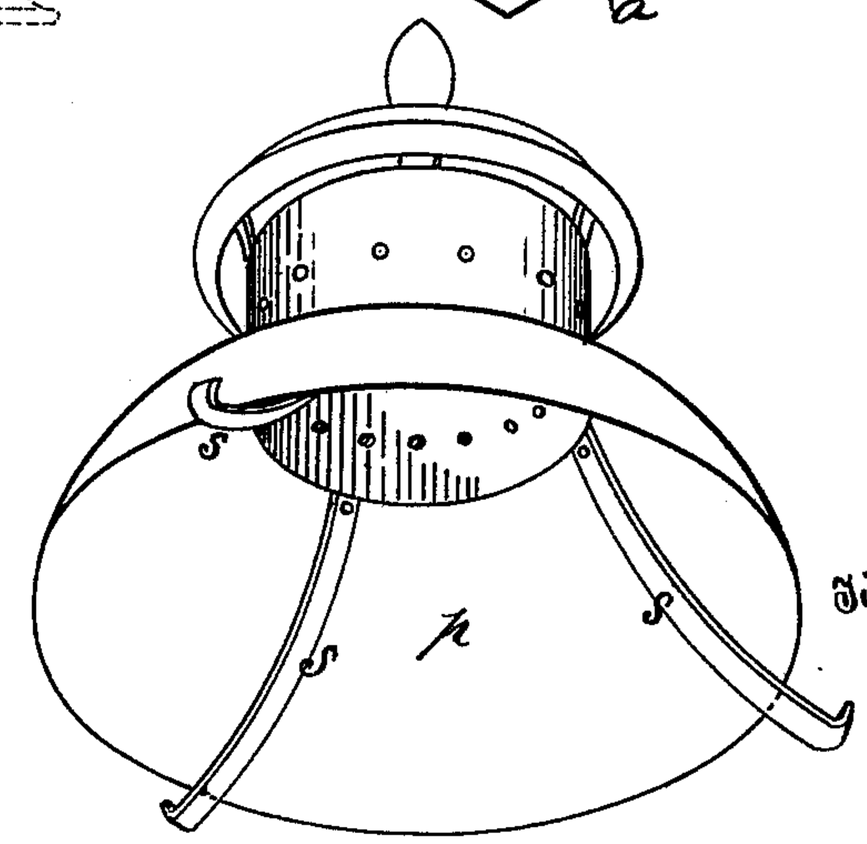

Fig.5.

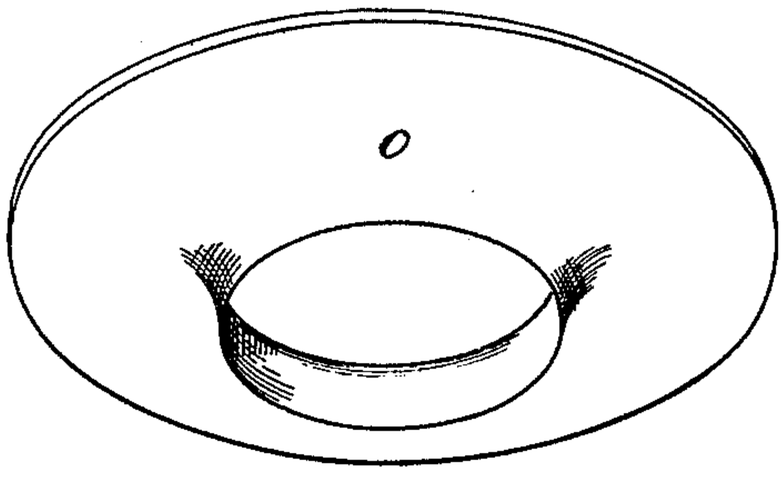

Fig.6.

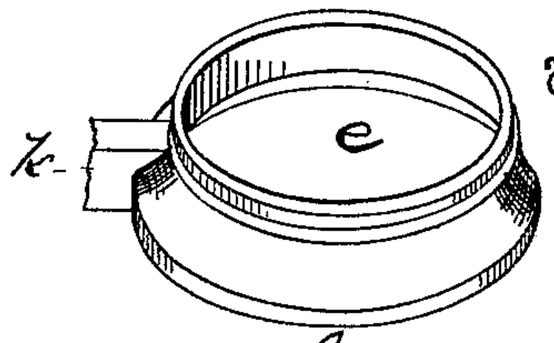

Fig.7.

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UNITED STATES PATENT OFFICE.

JAMES IRWIN, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN STREET-LAMPS.

Specification forming part of Letters Patent No. **214,394,** dated April 15, 1879; application filed February 10, 1879.

To all whom it may concern:

Be it known that I, JAMES IRWIN, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Street-Lamps; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of devices embodying my invention. Fig. 2 is a vertical central section of the same. Fig. 3 is an elevation of the devices, the globe being detached and the cap and reflector turned up, the second position of the cap and reflector shown in dotted line. Fig. 4 is an enlarged detailed sectional view on line *x x*, Fig. 3, showing the manner of attaching the reservoir to the standard when a vapor-burner is employed. Figs. 5, 6, and 7 are detail views, showing the manner of constructing the cap or hood and the reflector. Fig. 8 is an enlarged sectional view of the deflector.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of street-lamps; and consists, first, in so constructing the globe-ring and air-deflector that any moisture caused by the sweating of the globe will be prevented from clogging the air-inlets and interfering with the necessary supply of air to the flame; second, in so constructing the cap or cowl in sections that a reflector of either glass, metal, porcelain, or other suitable material may be employed at will; third, in combining the cowl with the standard by a collar which is both hinged and swiveled on the standard, whereby the collar may be slightly lifted to remove the globe, and then turned aside in order to prevent injury to the reflector; fourth, in a detachable bracket provided with a set-screw, whereby the reservoir, (for gasoline or like substance,) if employed, may be readily attached to and detached from the standard, and the height of the reservoir adjusted at will; and, finally, in details of construction hereinafter more specifically set forth.

In the drawings, *a* indicates the bent or curved standard, provided below with a ring or socket, *b*, adapted to fit a post, bracket, or other suitable support.

The standard *a* will be properly curved to accommodate the shape of the globe employed, which, in this instance, is an oval or of ovoid form, *c*, terminating in two contracted openings or necks, *c'*, which fit the base and cap rings *d e*, whereby the globe is steadied and supported.

d indicates the base-ring, which may be permanently or detachably connected to the standard *a*, as preferred. Said ring is perforated with small orifices, as at *d'*, to serve a double purpose—first, to admit air, and, secondly, to permit the escape of any moisture which may deposit on the inner surface of the globe and run down onto the base-ring, and which, if such means of escape were not provided, might obstruct the regular air-inlets, which supply the burner. Where an unobstructed air-opening has been heretofore left in this base-ring *d*, the flame of the burner has been caused to flicker or wave, and has frequently been blown out by strong air-currents, gusts of wind, &c., to obviate which difficulty I have arranged a deflector in the opening of the ring. This deflector I usually and preferably construct as shown in the drawings—that is to say, I form a cup or annulus, *f*, adapted to fit snugly within the base-ring *d*, and close the center of the annulus *f* by a hinged door, *g*, the latter of sufficient size to permit the free introduction of the hand and arm when the burner is to be reached.

From the annulus or cup *f* projects a vertical flange, *f'*, and upon the hinged door *g* is a cup or concave disk, *g'*, both cup and door being perforated at intervals, as at *i i*, to admit air to the flame.

It will be evident with the construction specified that the force of the air-currents entering by the perforations *i i* will be deflected and broken by the concave disk *g'* and flange *f'*, so that the steadiness of the flame of the burner will not be interrupted; and it will also be evident that the air-currents will be directed outward against and protect the globe.

e indicates the cap-ring, which not only serves to secure the globe, but also affords attachment for the deflector and cap or cowl.

This cap-ring *e* may be constructed in any desired manner, but is preferably a cast annulus, whose diameter adapts it to fit the globe, and it is hinged to the upper end of the standard *a*, as at *k*, so that it can be readily lifted to release the globe.

When the reflector used with the globe and cap is formed of glass or porcelain it will be liable to be broken if the cap and cone are not securely placed when the globe *c* is removed; and to obtain this end I swivel the hinge-connection *k*, as at *l*, so that when the ring *e* has been sufficiently lifted to release the globe *c*, the ring, cowl, and deflector can be turned aside and left in a horizontal position, as indicated in dotted line, Fig. 3.

To secure the cap-ring *e* when in position, I form a pin, *m*, on the standard, which pin enters an opening in the hinge of the cap-plate *e*, the two being then bound together by a set-screw, *n*, or equivalent means.

This device may, if desired and so adjusted, also serve to sustain the ring and cowl, and prevent them from binding too tightly on the globe.

o represents the reflector, which may be of metal, glass, porcelain, or any other suitable material, and is a flaring annulus, whose inner diameter corresponds with the neck of cap-ring *e*, upon which said reflector is fitted, and by which it is supported. The outer diameter of this reflector *o* corresponds with the greatest diameter of the cap or cowl *p*, which is supported by the reflector, the reflector being interposed between the cap-ring and cowl, and the several parts being firmly bound together by the straps *s*, which are made fast to the interior of the cowl, pass through the reflector, and are secured to the cap-ring *e*, either by turning down the ends of the straps, by riveting, or in other suitable manner.

The cowl *p* may be formed of any suitable material, but is preferably sheet metal.

When a vapor-burner, or other burner employing gasoline, benzine, or other light inflammable liquid, is to be used, a reservoir will be required, and for attaching the same to the lamp I employ a bracket, *t*, having an open diamond or other shaped slot, *u*, the opening in the slot being sufficient to permit it to pass the standard *a* where it is cut away, as at a^1, and the shape of the slot *u* corresponding to a cross section of the standard *a*.

In order to prevent the bracket *t* from slipping down, a shoulder, a^2, is formed on the standard; and to retain and regulate the height of reservoir *r* a set-screw, *v*, is employed in the opening of bracket *t*, through which the feed-pipe *r'* passes. The feed-pipe *r'* is bent down and passed under the globe-ring *d*, through a notch in the door, *g*, and then brought over the center of the concave disk *g'*, so that the attached burner may be centrally placed with relation to the globe *c*.

The above devices or their equivalents constitute my invention, and their operation is as follows: If a vapor-burner is used, the reservoir *r* will be attached to the standard *a* by the bracket, and its height regulated by the set-screw *v*, so as to properly adjust the burner. When the light is to be lighted the door *g* can be lowered and the hand introduced into the globe *c* for that purpose, after which the door is closed, bringing the concave disk *g'* into place. (See Fig. 2.) The air-currents to support combustion will enter by ports *i i*, and, striking the deflectors *f' g'*, will have their force broken, so that they will not cause the flame to waver or flicker, but will become steady and uniform, notwithstanding high winds. These deflectors also direct the air-currents toward the globe *c*, so as to protect it in a measure. Any moisture of condensation on the interior of the globe will, on reaching the base-ring, escape by the perforations *d'*, and even if the same should become obstructed the water would have to rise above flange *f'* and overflow onto the door *g* before the air-currents which supported combustion would be materially interfered with.

The globe *c* can be removed by turning up the cap-ring *e* and cowl; but if the reflector *o* is of fragile material, so that it would be liable to break if so exposed, then the ring need only be raised on its hinge sufficiently high to release the neck of the globe and to clear peg *m*, when it can be turned on the pivot to get it out of the way, and be again permitted to resume its horizontal position.

The advantages arising from my invention are, first, the ability to obtain a steady and equable light; second, the ability to employ reflectors of any desired material, and to readily replace the reflector should it become injured; third, the facility with which the globe can be removed and replaced, and the ease with which a vapor or other burner can be attached.

Having thus described the nature and advantages of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the globe of a street-lamp, of a base-ring provided with a deflector, and having small orifices for the escape of moisture, substantially as specified.

2. The combination, in a street-lamp, of the standard, the base-ring, and the cap-ring, the cap-ring being both hinged and pivoted or swiveling, substantially as and for the purpose specified.

3. The combination, with the standard of a street-lamp, of the hinged and pivoted or swiveling cap-ring, and the peg and screw for fixing the cap-ring, substantially as and for the purpose specified.

4. The combination, in a street-lamp, of the cap-ring, the cowl, and the interposed reflector, the several parts being detachably connected, substantially as and for the purpose specified.

5. The combination of the cap-ring, the cowl, and the interposed reflector, the several parts being bound together by the straps which pass from the cowl to the cap-ring, substantially as and for the purpose specified.

6. The combination, with the standard of

a street-lamp, of the detachable reservoir-bracket, said bracket adapted to sustain the reservoir, and provided with a set-screw, or its equivalent, for adjusting the reservoir, substantially as specified.

7. The combination, with the base-ring of a street or similar lamp, of the annulus *f*, provided with flange *f'*, and the door *g*, provided with the concave disk *g'*, substantially as and for the purpose specified.

In testimony whereof I, the said JAMES IRWIN, have hereunto set my hand.

JAMES IRWIN.

Witnesses:

JOHN K. SMITH,

R. H. WHITTLESEY.